



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,791	10/01/2003	Gerd Zimmermann	4114-8	3670
23117	7590	03/24/2008	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			CAI, WAYNE HUU	
			ART UNIT	PAPER NUMBER
			2617	
			MAIL DATE	DELIVERY MODE
			03/24/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/674,791	ZIMMERMANN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	WAYNE CAI	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 20 December 2007.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 2-16, 18, 20 and 23-33 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 2-16, 18, 20 and 23-33 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/15/08.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on December 20, 2007 has been entered.

***Response to Arguments***

2. Applicant's arguments filed December 20, 2007 have been fully considered but they are not persuasive.

Independent claims 23, 29, and 30 have been amended to include the feature that the quality parameter is selected from more than two values. It appears to the Examiner the cited reference, specifically the teachings of Kobayashi still read on claimed limitations.

The new limitation mentioned above is broadly and reasonably interpreted as to allocate a quality parameter to the assessed frequency based on **more than two values**. The Examiner respectfully suggests the Applicant to specifically and clearly define what two values are or what exactly the value means. Otherwise, it is the Examiner's position give the broadest reasonable

interpretation of the claim language. The "value" is reasonably interpreted as a specific numerical value. For example, the value of 5.25 GHz, or 5.35 GHz, etc.

With respect to the teachings of Kobayashi, it is clear to one skilled in the art that Kobayashi teaches or suggest to determine or assess whether a signal or a frequency interferes with other signals. It is also noted that the signal or a frequency the system is assessing is a value, and the interference frequency band, 5.25 GHz, and 5.35 GHz, is another set of values. Based on the assessed frequency and the interference frequency band, a quality parameter is allocated. In other words, based on three values, the assessed frequency and two values of the interference frequency band, the assessed frequency is determined or allocated as interfered or not interfered with other signals.

Hence, the previous cited art still reads on these claimed limitations.

### ***Claim Objections***

3. Claims 24-26 are objected to because of the following informalities:

Claim 24-26 recites "The method of claim 23, further comprising performing act 1)..." It should be corrected as -- The method of claim 23, further comprising performing act a) - -

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 23, 29, and 30 recites the limitation "selecting one or more of the plural frequencies in dependence on the allocated quality parameters for use by the system" in step c of each independent claim. There is insufficient antecedent basis for this limitation in the claim. It should be corrected as - - selecting one or more of the plural frequencies in dependence on the allocated quality parameters for use by the wireless communication system - -

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 3-5, 9, 23, 29, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (hereinafter "Kobayashi", US 2001/0039183).

**Regarding claim 23**, Kobayashi discloses a method of controlling frequency selection in a wireless communication system, the method comprising:

a) assessing plural frequencies with respect to a radar interference signal (paragraphs 0123-0127, 0132-141, 0184, 0187, and 0203);

b) allocating a quality parameter to each assessed frequency, the allocated quality parameter being selected from more than two values indicating a probability that the frequency is occupied by the radar interference signal (paragraph 0187);

c) selecting one or more of the plural frequencies in dependence on the allocated quality parameters for use by the wireless communication system (paragraphs 0188 and 0189); and

d) further assessing one or more of the plural frequencies with respect to radar interference signal, wherein measurement for each assessed frequency is adapted to the quality parameter value allocated to the respective frequency (paragraph 0193, and 0187).

**Independent claims 29 and 30** are similar to independent claim 23; therefore, they are also rejected for the same reasons set forth above.

**Regarding claim 3**, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein the quality parameter can assume any value between a lower quality border value and an upper quality border value (paragraph 0187).

**Regarding claim 4**, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein in step c) only those frequencies are selected to which quality parameters satisfying a threshold condition are allocated (paragraphs 0188-0189).

**Regarding claim 5**, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein at least step a) is performed during a normal transmission mode (paragraph 0184).

**Regarding claim 9**, Kobayashi discloses all limitations recited within claim as described above. Kobayashi also discloses wherein, if at least one of the radar interference signal or other interference signal is detected in act d), repeating act a) to c) (paragraph 0187).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter “Kobayashi”, US 2001/0039183).

**Regarding claims 24-26**, Kobayashi discloses all limitations recited within claims as described above. Kobayashi, however, does not specifically teach performing act a) for a time period that corresponds to at least one typical radar pulse period, or ten seconds, or four to twenty seconds. However, it is obvious and/or well known in the art that the time span of one to two antenna rotations (about 10 to 20 seconds) is usually required for safely detecting the radar

signals. Therefore, it is obvious to one skilled in the art to monitor for radar interference signals for a period of this known time span.

**Regarding claims 27, and 28,** Kobayashi discloses all limitations recited within claims as described above. Kobayashi, however, does not specifically teach wherein the system is a High Performance Radio Local Area Network, and the system is an IEEE 802.11 a/h system. However, the features recited within claims are simply the standards, which is obvious and/or well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the known standards in the current invention in order to effectively detect the interference signals in the wireless network.

10. Claims 10-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter “Kobayashi”, US 2001/0039183) in view of Meredith et al. (hereinafter “Meredith”, US 6,052,605).

**Regarding claim 10,** Kobayashi discloses all limitations recited within claim as described above, but does not specifically disclose feature of claim 10.

In a similar endeavor, Meredith discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith further discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith also discloses wherein during regular operation receive/transmit pauses are artificially created (col. 2, lines 28-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kobayashi in view of Meredith.

The motivation/suggestion for doing so would have been to accurately detect the interference signals.

**Regarding claims 11, and 12,** Kobayashi and Meredith disclose all limitations recited within claim as described above. Meredith further discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith also discloses periodically monitoring one or more of the selected frequencies to assess an average quality thereof (col. 2, lines 41-46). Even though, Meredith does not specifically disclose transmitting on the one or more frequencies having the highest average quality. It is however, obvious to one skilled in the art to transmit the highest average quality since the average quality has been obtained by monitoring, and calculated.

**Regarding claim 13,** Kobayashi and Meredith disclose all limitations recited within claim as described above. Meredith also discloses wherein after a predefined period of time the method returns to step a) (col. 2, lines 41-45).

**Regarding claim 14,** Kobayashi and Meredith disclose all limitations recited within claim as described above. It is also obvious to one skilled in the art that for a specific transmission frequency the predefined period of time is selected in dependence on the quality parameter previously allocated to this transmission frequency (i.e., when there is no potential interference detected, then the selected frequency would still be able to use in the channel).

**Regarding claim 15**, Kobayashi and Meredith disclose all limitations recited within claim as described above. It is also obvious to one skilled in the art that the predefined period of time is selected additionally in dependence the transmission quality of the currently used transmission frequency (e.g., when there is no potential interference detected, then the selected frequency would still be able to use in the channel).

**Regarding claim 18**, Kobayashi and Meredith disclose all limitations recited within claim as described above. Meredith also discloses a continuous interference assessment and avoidance in a land mobile radio system. Meredith also discloses stored on a computer readable recording medium (col. 2, lines 41-46).

11. Claims 2, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter “Kobayashi”, US 2001/0039183) in view of Wallstedt et al. (hereinafter “Wallstedt”, US 6,466,793).

**Regarding claim 2**, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose for the quality parameter can assume one of a plurality of pre-defined values, a first value indicating that a frequency is occupied, a second value indicating that a frequency is not occupied, and a third value indicating that a frequency might be occupied.

In a similar endeavor, Wallstedt discloses an automatic frequency allocation (AFA) for wireless office systems sharing the spectrum with public

systems. Wallstedt also discloses the quality parameter can assume one of a plurality of pre-defined values, a first value indicating that a frequency is occupied, a second value indicating that a frequency is not occupied (col. 1, line 59 – col. 2, line 2), and except for a third value indicating that a frequency might be occupied.

However, it is obvious to one skill in the art to arrive at the invention with the third value indicating that a frequency might be occupied since it is obvious to include different quality parameters in controlling the frequency selections in wireless communications so that the systems could determine when to switch to the other frequency bands.

**Regarding claim 16**, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose wherein prior to switching from a first transmission frequency to a second transmission frequency, the second transmission frequency is subjected to at least steps a) and b).

In a similar endeavor, Wallstedt discloses an automatic frequency allocation (AFA) for wireless office systems sharing the spectrum with public systems. Wallstedt also discloses wherein prior to switching from a first transmission frequency to a second transmission frequency, the second transmission frequency is subjected to at least steps a) and b) (col. 5, line 45 – col. 6, line 32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of monitoring and allocating

quality parameters so that it switches the transmission frequency only when required.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter “Kobayashi”, US 2001/0039183) in view of Wiese et al. (hereinafter “Wiese”, US 6,404,830).

**Regarding claim 6**, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose wherein at least step a) is performed prior to a normal transmission mode.

In a similar endeavor, Wiese discloses a digital radio frequency interference canceller. Wiese also discloses wherein at least step a) is performed prior to a normal transmission mode (fig. 11, element 1102, and its descriptions).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of monitoring prior to a normal transmission mode so that the interference signals could be prevented in advance.

13. Claims 7-8, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter “Kobayashi”, US 2001/0039183) in view of Gray (US 2002/0160769 A1).

**Regarding claim 7**, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose wherein at least

step a) is performed by a separate monitoring device in communication with at least one of an access point and a central controller (CC) of the wireless communication system.

In a similar endeavor, Gray discloses an apparatus and associated method for reporting a measurement summary in a radio communication system. Gray also discloses wherein at least step a) is performed by a separate monitoring device (MD) in communication with at least one of an access point (AP) and a central controller (CC) of the wireless communication system (fig. 1, elements 14, 18, and 46 and its descriptions).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the monitoring device, access point, and central controller to communicate with each other in detecting the interference signals.

**Regarding claim 8**, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose communicating the allocated quality parameters to an access point or a central controller of the same or a neighboring wireless communication system.

In a similar endeavor, Gray discloses an apparatus and associated method for reporting a measurement summary in a radio communication system. Gray also discloses comprising communicating the allocated quality parameters to an access point or a central controller of the same or a neighboring wireless communication system (paragraphs 0044-0046).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of communicating the allocated quality parameters to an access point so that the frequency range could be selected.

**Regarding claim 20**, Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose a monitoring device (MD) associated with or remote from at least one of an access point (AP) or a central controller (CC), wherein the monitoring device (MD) includes at least the first unit.

In a similar endeavor, Gray discloses an apparatus and associated method for reporting a measurement summary in a radio communication system. Gray also discloses a monitoring device (MD) associated with or remote from at least one of an access point (AP) or a central controller (CC), wherein the monitoring device (MD) includes at least the first unit (paragraphs 0043-0046; fig. 1 and its descriptions).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a monitoring device, access point, central controller to monitor, and report the radar-like interference signals.

14. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (hereinafter “Kobayashi”, US 2001/0039183) in view Kuhn (US 6,400,305).

**Regarding claims 31-33,** Kobayashi discloses all limitations recited within claims as described above, but does not specifically disclose further assessing the one or more of the plural frequencies selected in act c) with respect to transmission quality.

In a similar endeavor, Kuhn discloses wideband radar detector with three sweep input stage. Kuhn also discloses further assessing the one or more of the plural frequencies selected in act c) with respect to transmission quality (col. 5, line 44 – col. 6, line 25; col. 15, line 59 - col. 16, line 32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine these references together.

The motivation/suggestion for doing so would have been to improve the sensitivity to radar signals without sacrificing other interest signals.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WAYNE CAI whose telephone number is (571)272-7798. The examiner can normally be reached on Tuesday-Friday from 9:00 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Cai/  
Examiner, Art Unit 2617

/Duc Nguyen/

Supervisory Patent Examiner, Art Unit 2617